

IN THE CLAIMS:

Set forth below in ascending order, with status identifiers, is a complete listing of all claims currently under examination. Changes to any amended claims are indicated by strikethrough and underlining. This listing also reflects any cancellation and/or addition of claims.

Claims 1-91 (cancelled)

Claim 92 (currently amended)

A nanowire-based device, which comprises:

an electrically conductive layer;

an organic layer positioned on the electrically conductive layer, the organic layer being elongated and being formed of a plurality of organic molecules each including a plurality of conjugated π -bonds; and

a nanowire positioned on the organic layer to be substantially aligned with the organic layer.

Claim 93 (original)

The nanowire-based device of claim 92, wherein the electrically conductive layer includes a metal.

Claim 94 (original)

The nanowire-based device of claim 93, wherein the metal is gold.

Claim 95 (original)

The nanowire-based device of claim 92, wherein each of the plurality of organic molecules further includes an anchoring group having an affinity for the electrically conductive layer and a polar group having an affinity for the nanowire.

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Claim 96 (original)

The nanowire-based device of claim 95, wherein the polar group is electrically charged.

Claim 97 (original)

The nanowire-based device of claim 95, wherein the polar group includes at least one of a nitrogen atom and an oxygen atom.

Claim 98 (original)

The nanowire-based device of claim 95, wherein at least one of the plurality of organic molecules is a substituted heteroarene.

Claim 99 (original)

The nanowire-based device of claim 98, wherein the substituted heteroarene is selected from the group consisting of 4-mercaptopyridine, 2-mercaptoimidazole, and 2-mercaptopyrimidine.

Claims 100-101 (cancelled)

Claim 102 (currently amended)

A nanowire-based device, which comprises:

a substrate;

a pair of electrical contacts formed on the substrate, the pair of electrical contacts being spaced apart from one another;

a first plurality of organic molecules deposited on the pair of electrical contacts, the first plurality of organic molecules being electrically conductive and each including a polar group;

a second plurality of organic molecules deposited on the substrate between the pair of electrical contacts, the second plurality of organic molecules each including a non-polar group; and

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a first nanowire deposited on the first plurality of organic molecules to electrically couple the pair of electrical contacts.

Claim 103 (original)

The nanowire-based device of claim 102, wherein the pair of electrical contacts includes at least one of a metal and a metal oxide.

Claim 104 (original)

The nanowire-based device of claim 102, wherein the polar group has an electrostatic affinity for the first nanowire.

Claim 105 (original)

The nanowire-based device of claim 102, wherein each of the first plurality of organic molecules further includes a plurality of conjugated π -bonds.

Claim 106 (cancelled)

Claim 107 (currently amended)

The nanowire-based device of claim ~~102~~¹⁰⁶, wherein the non-polar group substantially lacks an electrostatic affinity for the first nanowire.

Claim 108 (currently amended)

The nanowire-based device of claim 102, wherein the first plurality of organic molecules are deposited to form a first domain and a second domain, such that the first domain is positioned on a first one of the pair of electrical contacts, and thea second domain that is positioned on a second one of the pair of electrical contacts, and wherein the first nanowire is deposited to bridge the first domain and the second domain.

Claim 109 (currently amended)

The nanowire-based device of claim 108, wherein the first plurality of organic molecules are further deposited to form a third domain and a fourth domain, such that the

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third domain is positioned on the first one of the pair of electrical contacts, and thea
fourth domain ~~that~~ is positioned on the second one of the pair of electrical contacts, and
wherein the nanowire-based device further comprises:

a second nanowire deposited to bridge the third domain and the fourth domain.

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